The Builder.

SATURDAY, OCTOBER 28, 1854.

IN our last article, treating of the growth of Italian architecture, as suggested in the Courts of the Crystal Palace at Sydenham (p. 530), we brought down our view to the time of Michelangelo, and hinted at the pernicious effect which his example in some respects had. The very evil into which we fall at this day,—copying what—integral parts with the virtues of the master—become the vices of the copyist—was the dangerous road taken by some of the successors of this great man, as of another Italian artist at a later period. There is obvious error against plain sense, in decorating the cove above a cornice with the representation of a balustrade, as we recollect seeing in the old British Museum, in ceilings conceived in the same manner as those referred to in the often-quoted line from Pope, painted by Verrio and Laguerre. Strange, however, as it may be now—architects, otherwise of high ability, do not appear to have perceived the advantages of the rational course in the union of the arts, and the disadvantages which were entailed by the opposite practice. Even Sir Christopher Wren allowed the noble dome of his cathedral to be marred by this painter's architecture. It seems to us that the error of painted imitations of forms, where the reality could be found, which had become so offensive of late years, has never till recently been properly regarded. The best argument against the house-painter's practice—an error originating in the same mistake as the artist's—has been stated elsewhere—to the effect, that in the proper exercise of art there should be no confession of weakness. This, however, there is in the Italian styles,—beginning with the painted panelling upon arch mouldings in the work of Cimabue, mentioned in a former article,—in the painted architecture attached to the figure compositions of some of the succeeding decorative artists, as Bernardino Luini, and even in the imitative mouldings which separate the subjects of the ceiling by Raffaelle, from the Camera della Segnatura, in the Vatican, of which a fine copy, by Mr. A. Stevens, is placed in the gallery attached to the Italian Court at Sydenham.

But we are passing away from the sketch of progress, which is all that we can find space for. Vignola was in many respects the best of the modern Italian architects, and that one from whose buildings and published works there is most to be derived. He was a master of the art of proportion: he knew the secret of the subordination of parts, by which vastness can be given to a whole. With him, doors and windows were small: pilasters, wide apart, had the weakness of appearance counteracted by the introduction of a panel,—so avoiding the use of coupled shafts. The orders—to which, however, he gave great attention—were used on a small scale, and often at the top of a building; and he was the first to use the modillion cornice, or that where the modillions extend to the frieze, and which is found in the upper order of St. Paul's Cathedral. His works have a further distinctive character by the avoidance, on the cornice, of all blocking, or balustrade.

In Venice, where the Renaissance style long prevailed, we have a remarkable succession of artists. San Michele, of Verona, used a combination of orders and rustics, in a manner which will no doubt be objected to by critics of the cood-blooded species, but which never fails to impress the unprejudiced beholder. Of the manner referred to, something may be seen in London, in the Water-gate at the bottom of Buckingham-street (the authorship of which, by Inigo Jones, was lately disputed in these pages), and in portions of the front of the terrace at Somerset-house. San Michele was also celebrated as a military architect, and whilst he led the way to the modern system of fortification, no gates of modern fortified towns have had the grandeur which he contrived to produce in those of Verona. Sansovino adopted the manner of Peruzzi, as to the superimposed orders and entablature,—as seen in the adaptation of one of the principal works of the former architect, now in progress in Pall-mall. An admirable invention of his, was that of columns to his windows, coupled in the thickness of the wall. The works of Sansovino were also characterised by the great use of sculpture and ornament. About this time we meet with the Venetian window. Arch-headed openings and engaged columns were amongst the most common features in the works of the Venetian school.—Palladio was remarkable for the plans of his buildings, which in the case of his villas, were well designed with a view to the effect of the roofs. Of all architects, we hold him to be least appreciable from drawings, such as are to be found in the illustrations of his works by the younger Scamozzi. It is difficult to characterise the style of one who accepted all valuable materials, and has left so much. It is worthy of remark, as we are reminded in the "Handbook," that he had that power of design which could be independent of the use of ornamented mouldings, of which there is no trace in his three principal works. His chief architectural invention was the combination of major and minor orders, seen to the best effect in the Basilica at Vicenza, and by which the same result was attained as by the peculiar method of Vignola. Let us here remark, by way of illustration of the several assertions on which we have ventured, that in no case is the value of perspective representation so well shown as in that of the building just mentioned. A capital drawing of it may be recollected by those who have had the advantage of hearing the lectures by Professor Cockerell, at the Royal Academy, which have been reported in these pages In perspective, the roof is no longer the huge mass which it appears in that which, strange to say, is the ordinary mode of representation, even in works not intended exclusively for architects. Every one, however, is liable to be deceived who calculates upon a certain result from roofs, viewing them as drawn in elevation.

The name of Scamozzi, though a celebrated one, is not remarkable for any great contribution to our art. He generally used orders above orders, and he was the first to accomplish the true portico with disengaged entablature, in any large dimensions.

Were we giving a lengthy notice of Italian architects, our account would by no means be complete without some reference to the architects of the palaces of the "superb" city of Genoa.

One Italian architect we should not omit to name. This artist, Sebastian Serlio, the designer of a curious ceiling, copied at Sydenham, was the author of a work on architecture, which was published in France, as well as Holland and England. Living early in the sixteenth century, he and the other Italians who were employed by Francis I. contributed to introduce into France the pure Italian taste, which appears to have existed there coëvally with the Renaissance, and which subsequently modified, and further inoculated with the manner of the later Italians, at length assumed the shape of a distinctive style of domestic architecture. Whilst, previous to the time of Jones, the direct influence of Italy upon English architecture, was merely that associated with a love of Italian literature, or arising from the visits to Italy of those who were not practical architects; in France, there continued to be a periodic introduction of whatever Italian art happened to prevail, and which was modified, and used collaterally with the previously existing style. The Renaissance style had been followed, as we have seen, to a late date, and it is, even now, one of the most favoured styles of the country, —or at least, in articles of manufacture. Even the Gothic system was not soon rooted out, and the cathedral at Orleans was commenced so late as 1601. Ultimately, what the force of Palladian example became to the architects of England, the teaching of Vignola was to France, and perhaps with greater advantage to the men of the continent. During the seventeenth century, however, the forms imported, assumed a shape very different from the ordinary Italian Cinque-cento, in the architecture of interiors. Indeed, men of a different stamp to such as we have mentioned, had sprung up in Italy, though men not deficient in invention, and certainly not in industry.

But, of the architecture of the seventeenth and eighteenth centuries we have no means of learning anything at the Crystal Palace; and as the works of that time are not inferior to any in interest, we may perhaps feel it necessary to devote some space to them, in another article.

Let us shortly recapitulate the chief features of the pure Cinque-cento architecture, or the distinctive, though not exclusive, style of the sixteenth century. Whilst the Renaissance, as a *style*, is marked by the comprehensiveness of its materials, the Cinque-cento is characterised by the rejection of cartouches and strap-work, and the use of natural forms, or modifications of details, for which there was precedent in the classical times. Many of the antique ornaments, however, were beautifully varied, and the Roman and Venetian palaces show how little the respect for precedent acted as a restriction upon good and originative architectural design.

Abundance of resources, such as architectural publications afford to modern architects, are after all but a clog upon invention, unless certain mental qualifications are possessed. That which writers on the æsthetics of art are laboriously studying to supply, namely, a guiding rule and principle—definable in words, or merely possessed—the Italian architects found in the works which they admired. Whether their course was the best open to them, we will not discuss; it at all events enabled them to leave works which, without detracting from the merit of some recent efforts, have not been surpassed, either by the exercise of a wider scope of invention, or by the pursuit of a score of different precedents.

The men of the sixteenth century, then, were no slavish copyists or unworthy artists, as we have seen them called by particular writers, who have fastened upon the name of Palladio, as especially open to censure. Without all the veneration for that great man that has been expressed in England—and which in those who, like Jones and Burlington, living in the recollection of his fame, it is easy to understand—Palladio's buildings should always be studied for their features of design and composition, without reference to their interest as the great models upon which the distinctive English style was founded.

We have said little about the Italian Court itself, at the Crystal Palace; and the reason is, that in this series of notices, we aim less at description than at leading to a view of the subject which we have often admitted, could not be comprehended within the small area of some few square feet. Of illustrations of Cinque-cento architecture there is but little, and of the later Italian styles nearly nothing.

What there is, however, is not inferior in beauty and interest to any other part of the collection.

The principal Italian Court occupies a space equal to that of the principal Renaissance Court. Attached to it, in similar position to that of the Elizabethan Court, is what is called the "Italian Vestibule," and which is treated somewhat differently from the main portion. In the principal court, at each end, is an arcade decorated with copies from the arabesques of the Vatican. The general architectural design of this court, both internally and externally, has been taken from the upper arcade of the quadrangle of the Farnese Palace—that portion attributed to the design of Michelangelo—and the example has been well selected. The reason for the adoption of coloured marbles *externally* as well as internally, in place of Travertine stone, however, is not well put in the "Handbook"—the buildings of *Northern* Italy named, having a much earlier date. As regards the advantage of similar use, as contrasted with decoration by polychromy, there can be no doubt. At the same time there are difficulties, such as there are in cases where materials are selected rather than designed,—requiring the architect to be accurately alive to the precise force of each colour—which it is very difficult to be, under the changes of locality and material to which an architect is subject.—The frieze with chimeræ, and festoons of leaves and fruit hanging from grotesque heads, is very well executed. There are several fine works of sculpture in front of the court, and busts of celebrated artists; and in the niches, are some good copies of candelabra and other works in bronze. The chief interest of the collection is in relation to the arts of painting and sculpture. There are casts of the principal works of Michelangelo. The group of Jonah and the Whale, now proved to have been carved by Raffaelle; the Pietà, by Bernini—a fine work, not marked by his usual peculiarities; panels from the bronze door of the Loggia, beneath the campanile of St. Mark's, at Venice, and the bronze door from the choir of St. Mark's, by Sansovino; works by Fiammingo, Baccio Bandinelli, and others. In the middle of the court, and not yet supplied with water, is a copy of a portion of the Fontana delle Tartarughe, from the Piazza Mattei, at Rome. Why it should be exhibited without the bronze figures by Taddeo Landini, casts of which are in the nave, is not apparent, since without them it gives the appearance of but questionable taste in Giacomo della Porta, its designer. We beg to protest against this unnecessary handling of the works of artists of ability, as rather too much in the way of proceeding of modern manufacturers, and as setting a bad example to the latter.

At each end of the court is one of the two monuments from the Medici Chapel, lately referred to. Amongst the principal objects in the gallery, are the bases of the Venetian standards (these also are strangely divided) and the figure of St. Jerome, by Torrigiano. The central space of the gallery has the ceiling by Serlio, which is one of the most curious works in the collection. The original, at the Biblioteca Antica, at Venice, is supposed to have been executed about the year 1540. It is painted in grey colours, with gilding here and there, and with considerable display of ornamental accessories, and, though quite opposed to modern ideas, is by no means ineffective. Serlio is called in one part of the "Handbook" a pupil of Bramante, and in another of Peruzzi. As Bramante died in 1514, it is not likely that the former statement can be correct. Indeed, we may remark that there are several discordant statements about celebrated men in the notices, interesting as these have been made generally. Bernini is in one place said to have been born in 1598—in another, in 1589. The latter date is the correct one. We should also say that the arrangement of the "Handbook" is open to improvement,—statements relating to the same question being distributed up and down about the book, where the comprehension of the reader would be best served by finding all in the same place. Another compartment of the gallery is covered by a copy of the ceiling by Raffaelle before referred to. The authors of the "Handbook" consider the original an example of the artist's complete mastery over the principles of the arrangement of painting as applied to decorative purposes. The subjects are emblematic of Theology, Poetry, Philosophy, and Law or Jurisprudence. Four circular spaces have allegorical figures on gold grounds, and oblong spaces are filled with subjects in allusion to the principal figures.

There are so many interesting questions connected with everything we touch upon, that we hardly dare attempt to extend this long description by further notice of the arabesques of Raffaelle. We have remarked that they are not specimens of the pure Cinque-cento, and probably the fact that they are not so, has to do with some of their defects. As a style of decoration, however, they are worthy of particular attention. Few works would be found to display an equal amount of invention in details, combined with a due subordination to general effect,—the great difficulty in interior decoration. They are, nevertheless, full of inconsistencies and improbabilities, and are in some respects very inferior to other productions of Giulio Romano, and others who worked upon them. The scholar profited from the master; but, the credit of all is mainly due to Raffaelle. The present copies, though, as it appears to us, faulty in drawing in some places, give probably the best idea of the originals that has yet been afforded; and it must be recollected, that the works at Rome are rapidly perishing. Those who are now decorating buildings in a similar style, should devote more attention to the landscapes and other subjects in compartments, than is generally given. We could name cases, where the intention—to interest and instruct—is defeated by the dirty daubs which have been introduced. The treatment of such subjects is under peculiar restrictions; the general effect of the decorations has to be first considered; but the details should bear close examination; in short, these should be produced by artists. A good *sketch* might often suffice. We have reason to know, that such spaces could be filled by competent hands, at a cost far too little in excess of that of the present sort of work for any importance to be attached to that consideration; and what is worth doing, should be done well, or not at all.

The Italian vestibule is an arrangement of arches, springing from the capitals of Corinthian columns, surmounted by an entablature and low attic. The whole is painted with a view to illustrate the painted imitation of relief and structural architecture, combined with figure compositions, which we have held was too common in the Italian style. We fear, therefore, we could not contend that such painting was not used—even in the case of exteriors; but again, it is worthy of remark, that the example at the Casa Taverna at Milan, of one story of which the present work is a copy, was, strictly speaking, to be viewed as in the condition of an interior. The works of Bernardino Luini, however, exhibit too many instances of such objectionable features as the painted triglyphs which we see here, for us to support the Italian practice. One objection is not as regards the chances of decay—for, the examples at Hampton Court show the possibility of preservation even in our own climate; but has reference to the question, whether our modern practice of confining coloured decoration chiefly to the interiors of buildings, is not founded on some obscure sense of æsthetic propriety. Luini's works, it is remarkable, date early in the sixteenth century, and not later, when the influence of painting upon architecture became general.

As the early Renaissance period was especially remarkable for the importance of sculpture as an art, the Cinque-cento period was conspicuous in regard to painting, and the walls of this vestibule are lined with an extraordinary collection of copies by Mr. West, nearly 150 in number, of works of the old masters. Without entering into the question of their merits as copies, we have no doubt that they will be most valuable, as a means of conveying better knowledge of the originals than can be obtained from engravings.

The want of union between painting and architecture—in some points—at a time when one individual practised all branches of art, is one of the most curious circumstances in the history of this period. We have seen that the work of the painter too often destroyed the work of the architect, or that it originated bad architecture, by the attempt to imitate structural forms. The architect was guilty of the same error, and when the walls of a building might with more propriety have formed a background to pictures, excessive colour and gilding were resorted to, as in the Jesuit churches, and the greatest dissonance was the result. All these errors we ought to avoid now;—at least, they appear to be fully apprehended in modern æsthetics.

The doors leading out of the vestibule into the Great Transept, are copies from those of the Cancellaria Apostolica at Rome, by Bramante, and were referred to in a former notice. The date is 1494.

The altar of the Madonna della Scarpa from Venice, and several other objects, are ranged on the exterior of the court next the Transept, where the principal work is the Moses, by Michelangelo.

We have thus gone through the series of the courts at the Crystal Palace; and though we might well have devoted even greater length to the history of certain styles, we trust we have not employed our space without contributing something to the important ends which may be advanced by this marvellous collection. Other branches of the general subject of art will require our attention, but in concluding our notices of the courts themselves, we will offer one or two observations. The course which has been taken in the illustration of styles of architecture by the architects at the Crystal Palace, has not in all respects met with our approval, and this we have not hesitated to state. But their task was one of no ordinary difficulty; and it is far easier to say now what are errors than it was then to avoid them. We have not quoted much from the "Handbooks," because we sought to give our readers what their space had not allowed them to contain; but they will be found generally of great service. Our professional readers and the public should feel that both for literary and professional labours, the architects of the courts, and all their coadjutors, are deserving of lasting thanks.

IRON GRATING OF THE TWELFTH OR THIRTEENTH CENTURY.

At times, mediæval ironwork of the same pattern is found in places far apart. M. Daly, in his excellent *Revue Générale de l'Architecture*, gives an instance which we have introduced here, namely, a grating in the church of St. Germer, in the *Département de l'Oise*, and a similar grating found in the Cathedral of Strasbourg. The forms, he says, are those adopted in the twelfth and thirteenth centuries. The grating at St. Germer has lost its original termination, and has a modern substitute, partly of wood and partly of iron. The construction of this grating is very simple. Each division is composed of the same element several times repeated, and this element is formed of thin bars of iron of the proper section, bound together. A small lump of iron is formed by the hammer at the ends of the bars, and this by means of a matrix and a blow of the hammer, is made to take the shape of a flower or palm-branch, as required. The rods are then bent into volutes, put back to back, with the third piece of iron between them, and secured by solder and the hammer. The piece of iron employed to tie them together in the centre receives also an ornamental shape.

The uprights are formed of two pieces of plate-iron, grooved, which clip the volutes, and are held together by iron pins. Each upright terminates in a lance form, and these in like manner clip the ornamental scroll at top. Coupled horizontal pieces secure the uprights at their summit and their base, and give to the whole grating the desired firmness.

Fig. 1. Grating at St. Germer.
„ 2. Grating, Strasbourg Cathedral.
„ 3. Portion of one division, at large; the fifth of real size.
„ 4. Details of uprights.
„ 5. Flower—half real size.
„ 6. Terminating flower of upper portion—half real size.

IRON GRATING OF THE TWELFTH OR THIRTEENTH CENTURY.

FIG. 1. FIG. 2.

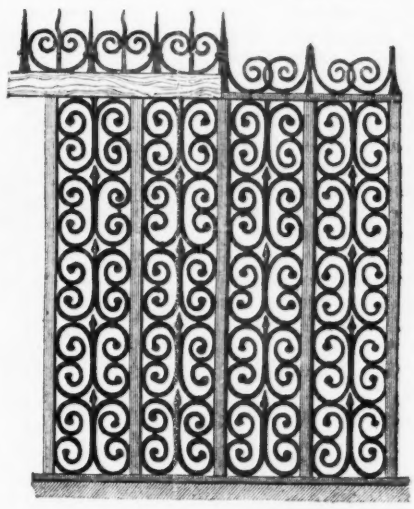


FIG. 3.

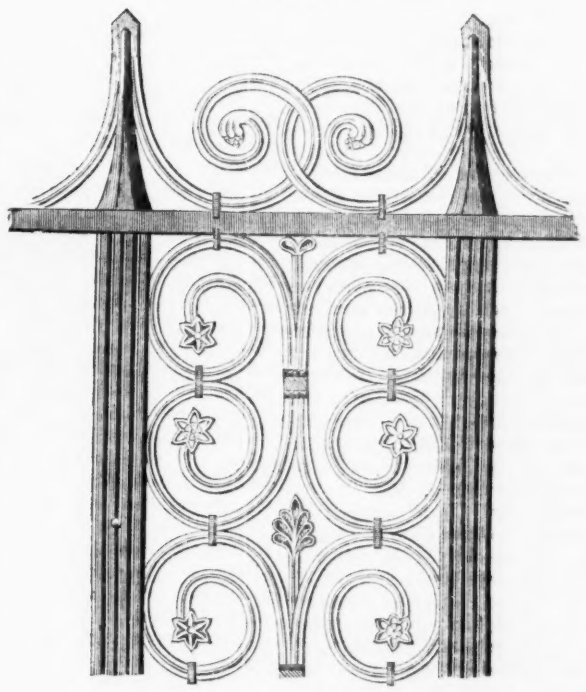


FIG. 4. FIG. 6.

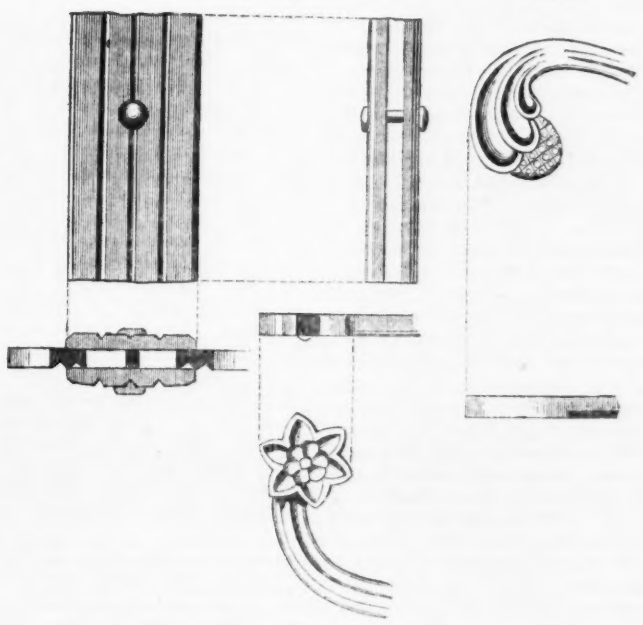


FIG. 5.

ON CURVES SUITABLE TO ARCHITECTURE.*

IT is impossible to limit by any arbitrary rules the curves which are suitable to architecture. All regular curves might, in different cases, be used with advantage; but as the number of possible curves is infinite, it should be the business of those who approach this subject to consider, on the one hand, what curve is most suitable for a required purpose, and on the other hand, what is most easy of application, either by geometrical construction, or, what is better, by mechanical description, the first being the most important, but the second a very important consideration; so important, practically, that we have been in the habit too exclusively of using the circle where other curves would have been more appropriate. We should, therefore, seek to use, as much as possible, curves which are easily described; but not from being sparing of thought or invention; but by so adapting our designs, and selecting the curves used, that they may both be most fitting, and most easily applied.

As a general rule, the circle should only be used where uniform curvature is sought for: in designs requiring varied or contrasted curvature it should be avoided. In the case of the former, *i.e.* in varied curvature, it should never be used, as, for instance, it has been in the late Gothic four-centred arch. In the case of contrasted curvature, as in the common ogee, produced by segments of circles, it should be limited to cases where great contrast is desired, as in Gothic ogee arches, &c. in which cases, although the contrasting arcs of circles form, as it were, a discord, they may yet be very effective. But in all cases where harmony is desired, the ogee, *i.e.* Hogarth's line of beauty, should be a regular mathematical curve, passing through a real point of contrary flexure, where, between the contrasting curvatures, there lies a point of absolute straightness,—a straightness taken advantage of by Watt, in the case of the curve called the "Lemniscata," to produce the parallel motion of the steam-engine.

The chief characteristics of curves are—1, Points of greatest curvature; 2, Of least ditto; 3, Points of contrary flexure; 4, Loops, nodes, and cusps; to which may be added, a symptotes, or straight lines towards which the curve always approaches, but never reaches. All these varieties are exceedingly well illustrated in the curve called the conchoid of Nicomedes.

It is very desirable in designing any object which introduces curved lines, that the above characteristics should be thought of, especially the greatest and least curvatures, and points of contrary flexure.

In designing a vase, for instance, we might wish to be able to select such a curve, that the lower portion of the profile should be convex, the curvature being least at the bottom; a point of quickest curvature about the middle, succeeeded by one of contrary flexure leading to the concave outline forming the neck, the latter having a point of greatest curvature at the lip. All this might be tolerably well designed by hand; but it would assist the artist to have before him a mathematical curve embodying the desired conditions, which might serve as a guide, or model, even if it would not itself suit the purpose exactly. Moreover, a careful study of several specimens of mathematical curves would greatly improve the hand in drawing and designing. But in all important cases, where a true curve can be applied, it would be desirable to do so, as the Greeks used a segment of the hyperbola for the echinus of the capitals of their Doric columns.

It is certain that the proper use of such curves has a great deal to do with expression in architecture, although we must not think that this alone can make the architect.

I will now proceed with a short sketch of the different styles of architecture which have succeeded one another, endeavouring to show their several capacities for the introduction of mathematical curves, before commencing the description of the curves of which the use is chiefly recommended. I must, however, first refer you to the enduring architecture of nature, which never grows out of date; in which the

* This paper was read at the Architectural Museum on the 2nd of October.

occurrence of regular and varied curves is endless. I believe that in the forms of shells, and in every kind of leaf, whether the delicate curvature of the bending bulrush, or the heart-shape leaf of the violet or cyclamen, or in other countless varieties of form,—in every case, there is a normal geometrical figure, which might perhaps be discovered by a sufficient examination, as in the case of the pendant bulrush we at once recognize the elastic curve, and in the nautilus, ammonite, and other shells, we find the equiangular spiral. It has often struck me that it would be an occupation worthy of a philosopher to investigate these forms by collating a sufficient number of examples.

But we will proceed to the less consistent architecture of man, and let it be our ambition humbly to follow the one, and not to allow any supposed superiority in any style or people hinder us from striving to surpass the other.

Omitting the Egyptian and Assyrian architecture, in which, as far as I know, there is no great refinement in the selection of curves, we first come to the Greek, in which architecture the fortunate circumstance of a simple idea having been elaborated into perfection during a long series of years, led to the use of a great number of beautiful geometrical curves. The hyperbola and parabola appear in the contours of the mouldings: the former curve also forms the entasis of the columns.

The Greek vases also give indications of the use of the conchoid of Nicomedes, and other curves. In all these there is the most complete union of science and art.

The Romans, who formed their architecture on the Greek model, seemed to have thrown aside the noble and reserved simplicity, which they had not the taste to appreciate, and strove chiefly to obtain a magnificence bordering on vulgarity. Still, so great a people could not fail to endue whatever they did with an expression of power. We find, in the forms used, nothing but straight lines and segments of circles; and if, from their example, we can draw but little to illustrate the use of varied curves, at least we feel that the want of them is a very serious defect.

Derived from the Roman, arose the Romanesque, from about A.D. 700 to A.D. 1100, also called Byzantine, Saxon, or Norman, according to the locality in which it prevailed. In this architecture, the curves used are chiefly circular-headed arches and circular mouldings, but in the carved ornamentation of the capitals, as well as in the Mosaic decorations of walls and ceilings, free undulating curves were continually made use of; and if circumstances should lead to the general use of this style for ecclesiastical architecture, there would be nothing discordant in a more complete use of varied curves.

This architecture, as it grew in lightness and airiness, gradually prepared itself for the Gothic, and when its aspiration for loftiness was fulfilled by the introduction from the East of the pointed arch, a new epoch in architecture was completed. The pointed arch had existed for centuries in the East, without finding its true place in architecture.

The western architecture had been struggling for loftiness by stilting arches, and other expedients. From their fortunate combination, sprung that style which has done so much honour to the middle ages, so much so, that it seems to be the one object of many of the present highly civilised day, to throw themselves back into those times, and to endeavour to think their thoughts, and even to limit themselves to their mental stature. Let us by all means do honour to the great results they achieved, but let it be with an independent spirit.

But my object is to call your attention to the great development which the use of curves received, or might have received, in this architecture. The intersections of the vaulting especially offered innumerable places for curves of different kinds of curvature. But from want of geometrical skill, these opportunities were generally lost.

The principal ribs and cross springers were, with great propriety, in the earlier architecture, almost always single segments of circles; but the wall ribs, and other places where the peculiar form of the intersection of the vault often gave opportunity for introducing a segment of an ellipse or parabola, with the greatest advantage, is often a bungling, broken-backed affair.

The Gothic builders, however, were not at all insensible of the beauty of freely-drawn, and varied curves, as shown in many of the sections of their mouldings, such as the bell of the Early English capital, and the late Perpendicular hollow, and many others. Indeed, it would have been impossible for the artists who copied the infinite beauties of natural foliage so conscientiously and so well, to have shut their eyes to the exquisite beauties of Nature's laws offered to them in the common grasses by the wayside, in the graceful festoons of the clematis and other creepers hanging from the bushes where they chose so well their models, or the curves of quicker flexure in every leaf they copied.

The Gothic architecture was at its highest development in the style most incorrectly called Decorated, which prevailed from about A.D. 1260 to A.D. 1360.

This style has, with more justice, been called Curvilinear, and it was the judicious use of curved lines that gave it much of its character.

A more scientific treatment, without loss of spirit, would of course have been better, and would have led to a more permanent style; but when the various and beautiful combinations of circular arcs had run their round, the fashion changed, and I think, though others may differ, that, in the first instance, an improvement in stateliness was effected by the introduction of Perpendicular architecture; but this soon degenerated; for the life-giving love of nature, in sculpture and foliage, became cold and formal, and the political and religious conditions which were favourable to art had departed.

The artists of Italy had never been satisfied with the form of Gothic which had reached them, and conceived a longing to revive the classical architecture; and from the moment that Alberti and Brunelleschi found how plastic the Roman architecture was in their hands, the Gothic only held its place until the northern nations had been sufficiently educated in the Revival to supplant it. Before it fell, an opportunity was lost for the use of a mathematical curve, in the case of the depressed or Tudor arch, otherwise called the four-centred.

In such a combination, the two arcs of different circles which meet are sure to quarrel with each other, and each carrying the eye with it in the direction of its own complement, never can produce that beauty of gradual change of curvature seen in an elliptic, parabolic, or any other arc of varied curvature. The four-centred arch, and all false ellipses, ought to be at once and for ever excluded from architecture.

I omit the Elizabethan, which was in the strictest sense transitional.

The new style gave rather more facilities for the use of varied curves than the old,—in festoons, which are catenary curves, trusses, the curious volutes in which Michelangelo delighted,—elliptic arches and elliptic intersections in semicircular vaults, which were used with the greatest propriety and vigour by our architects of the time of Charles I. and Charles II.; the greatest names in England, I need scarcely remind you, being those of Jones and Wren.

Soon afterwards, in great measure on the authority of Bernini and Borromini, a less severe style came into vogue, in which all sorts of varied but unregulated curves were employed. The Louis Quatorze style has still its admirers, so that name will suffice to explain what I mean. The want of order and method in this style, as in the case of the later periods of the Gothic curvilinear, led to a change of feeling which soon resulted in the adoption of the Greek; a style, though in itself most perfect, very little suited to our every-day wants, and, without great modifications, unfitted for our climate. The mere copyists of the Greek have failed utterly; while most successful results have been produced by such men as Professor Cockerell and Schinkel, who have embodied in new combinations the character of that architecture; and in their works fine instances of profiles are to be found, drawn, if not by geometry, by intuition. As all, however, have not that gift, and yet are called on to use curved forms, it cannot but be useful to point out those which are most easily brought to bear, and are at once the most fitting and easy of mechanical or geometrical construction.* F. C. Penrose.

EDWARD WEDLAKE BRAYLEY, F.S.A.

Mr. Editor,—I have watched the progress of your excellent periodical from infancy to its present stage of vigour and soundness of principle and opinion, and have also a goodly range of its volumes, in which I have occasionally written a few articles. I am now induced to send you brief notices of an old associate and friend, whose life, writings, and professional works entitle him to rank amongst the "Worthies of England." With Mr. Brayley I continued in confidential association for more than sixty-five years.

In my boyish days, when I occasionally emerged from the black and dank cellar of the Jerusalem Tavern, London, I eagerly sought to obtain information and amusement at the book-shop of Mr. Essex (noticed in p. 69 of my Auto-biography), and there often met the future historian of Surrey, then apprenticed to an enameller in Red Lion-street, who was employed by Henry Bone (afterwards advanced in the Royal Academy to be one of its members) to prepare and fire enamelled plates, for small fancy pictures, in rings and trinkets. Mr. Brayley at that time, like myself, was an ardent reader and lover of books, and his conversation, with that of Mr. Essex, excited me to devote every spare moment I could procure from my common-place labours to read and meditate on such miscellaneous volumes and pamphlets as could be obtained. Though Mr. Brayley was my junior by more than two years, he had not only read much more extensively, but, from a more retentive memory, had attained a greater variety of information than myself. From this association, and from fortuitous circumstances, which human intellect never yet understood, ultimately sprang up a crop of literary works, which cannot fail to astonish the youthful reader who calculates their amount in volumes, pages, variety of subject, extent of labour in research, travel, embellishments, and in writing.

As may be reasonably supposed, they commenced in the most humble and unpropitious departments of literature. Our first *partnership* composition and speculation was a song called "The Powder Tax, or a Puff at the Guinea-pigs," written by my young friend, and sung publicly at a Spouting Club held at Jacob's-well, Barbican, where a crowded assemblage of smokers and tipplers met once a week to hear theatrical tyros, and even veterans, recite prologues, act scenes from plays, and sing songs. The new ditty was encored, and called for the following week; for powdered hair with "pig-tails" was popular and fashionable, as partly intimating something of aristocracy, and opposed to the "swinish multitude,"—a phrase which Burke had applied to the lower and democratic orders. We were tempted to print copies of our new ballad to give to friends, and sell, at one penny each. A thousand copies were soon disposed of, and more than seventy thousand were sold by a Mr. Evans, a noted song-printer in Long-lane, Smithfield, whose agents sang and hawked them about the streets for a long time. Thinking our literary property invaded and plundered, we threatened to prosecute the daring pirate, but he defied law and the two young authors. Soon afterwards, Mr. Brayley, at my instigation, wrote "A History of the White Elephant," for Mr. Fairburn, in the Minories, for whom I had been editor of two or three annual Song-books, a series of "Twelfth-night Characters," "The enterprising Adventures of Pizarro," &c. This association led to a more intimate union in a mutual copartnership, as joint editors of the "Beauties of England and Wales"—a work begun with little qualification for its arduous duties by either authors or publishers.

* In the course of the paper, the lecturer alluded to Mr. Jopling, as having done more than any other to advance the subject of mechanically described curves. Amongst the examples explained, and the instruments on the table used to produce them were, an instrument on the principle of the cone, drawing all the conic sections, namely, the ellipse, parabola, and hyperbola; trammels for the ellipse and cardioid; the conchoid of Nicomedes, and the cissoid of Diocles; Mr Jopling's line of beauty; Penrose and Bennett's helicograph, for drawing by continuous motion, the equiangular, or logarithmic spiral, suitable for volutes, and other curves of uniformly increasing curvature.

Its origin, progress, and characteristics I have fully explained in my Auto-biography, already referred to. Suffice it to say, Mr. Brayley wrote the greater parts of Volumes I. and II. whilst I travelled over five counties for materials, and directed the embellishments. A history of this once popular publication, which, though at first announced to be comprised "in about six volumes," and finished in the space of three years, extended to no less than twenty-five large volumes, and was in progress of publication more than fifteen years, would involve a curious, also a lamentable story of "the quarrels of authors," and their dissensions with publishers, as well as the caprices and forbearances of the latter. My own personal share of miseries in this drama was often painful, as well as mortifying and embarrassing. At length the authors and publishers separated. The former undertook to write and be responsible for certain counties and volumes of the work. Hence Mr. Brayley engaged to write the accounts of Hertfordshire, Huntingdonshire, and Kent, for Volumes VII. and VIII.; whilst I produced Lancashire, Leicestershire, and Lincolnshire, for the ninth volume. London and Middlesex were next assigned to my late partner; but he finished only one large volume and part of another on London, when he was superseded by Mr. Nightingale, who was employed by the publishers to continue and complete the topography of the metropolis. Though they were, perhaps, fully justified in making this arrangement, they were unfortunate in the selection of a new author, or rather compiler; for it is painful for me to refer to and read some of the pages of his continuation. Whole passages are taken from other books without acknowledgment, whilst errors, misstatements, and carelessness of matter, method, and language, pervade the two and half volumes to which Mr. Nightingale's name is attached.

In the second volume of my Autobiography is a detailed account of "The Beauties," with notices of publishers, authors, compilers, and correspondents; and the topographical reader is further referred to Mr. Brewer's valuable introductory volume to the work.

During the progress of the publication, and after the retirement of the original authors, Mr. Brayley wrote several other works on a variety of subjects, but mostly topographical and archæological. Two of these especially, deserve more particularly the attention and approval of the reader, from the extent and value of their multifarious contents. The first was the "History and Antiquities of the Abbey Church of St. Peter, Westminster," in 2 vols. quarto and folio, with numerous illustrations by J. P. Neale. This is a work of laborious research, of deliberate and careful investigation, discriminating and truthful analysis, and truly sound deduction.

The same praise may also be bestowed on "The History of Surrey," in 5 vols. royal octavo and quarto, written by him between the years of 1841 and 1848, with small aids from his son, Mr. Britton, and Dr. Mantle. It was projected and begun by myself and Mr. John Timbs, and was undertaken at the risk, and produced at the expense of Mr. Robert Best Ede, of Dorking, who expended some thousands of pounds on its execution. It is barely justice to the liberality and enterprise of that spirited and zealous tradesman, to state that whilst it reflects credit on him, it is also honourable to all parties whose names are attached to the work. In its artistic embellishments it surpasses any topographical publication that I am acquainted with.

Another volume, though projected by myself, and the dedication, preface, and several passages written by me, was mainly the production of Mr. Brayley's pen, and evinces the usual extent of his investigation and careful authenticity of narrative. It was produced soon after the lamentable fire of 1834, when most of the ancient parts of St. Stephen's Chapel, and the Palace, with the Houses of Parliament, and attached buildings were burnt, and others so much injured that it was deemed expedient to clear all away and erect a new and improved edifice in their place. "The History of the Ancient Palace of Westminster, with numerous Illustrations," was produced and printed in quarto and octavo, in 1836.

The following publications are of Mr. Brayley's writing: "Delineations of the Isle of Thanet and the Cinque Ports," 2 vols. 18mo. 1817; "Londiniana; or Reminiscences of the British Metropolis," 4 vols. 18mo. 1823; "History and Description of the London Theatres," 4to. 1827; "Popular Pastimes; being a Selection of Picturesque Representations of the Customs and Amusements of Great Britain," 8vo. 1816, with several engravings in aquatinta, from drawings by Stevanof; "Views of Suffolk, Norfolk, and Northamptonshire, illustrative of the Works of R. Bloomfield; with Descriptions and a Memoir of the Author," 8vo. 1806; a similar volume on the works of Cowper; "The Graphic Illustrator," containing a variety of essays, criticisms, biographical and archæological papers, and wood-cut illustrations. Though at one time calculated to be very popular and profitable, it was so irregular in its periodical appearance, that its readers and publisher became impatient and querulous; and after struggling on from its first appearance, July, 1832, to November, 1834, it died a natural death. On the wrapper of the last number the editor replied to a long list of correspondents, thanking and praising some for valuable communications, and promising others due attention to their favours in future pages. The communication of one, or rather a presumed contributor, thus remarks on the work:—

"May
Your illustrious illustrations
And your learned observations,
With your graphic representations,
Antiquarian communications,
Philosophic commentations;
And historic delineations,
With your clear elucidations
Of abstruse speculations,
And your patient examinations
Of all minor considerations,
Cause abundant remuneration
For your supererogation."

He also wrote "Descriptions of Places represented in Middiman's Views and Antiquities of Great Britain," 4to. 1813.

In 1806 appeared a quarto volume, written mostly by Mr. Brayley, with the name of Wm. Herbert annexed, entitled, "Lambeth Palace," illustrated, 4to. The same authors published a volume of miscellaneous poems, in small 8vo. in 1803, with the title of "Sir Reginald, &c." In 1805 Brayley edited a large royal 8vo. volume, under the title of "The Works of the late Edward Dayes," containing an excursion in Derbyshire, essays on painting and painters; also illustrative notes by E. W. B. who devoted much time and literary labour in producing a large and respectable volume, the profits of which were intended to benefit the surviving widow of the artist.

This publication, like some other plans in which my old friend became engaged, involved him in great sacrifice of time and pecuniary liabilities, and tended materially to harass and distress him. Hence, and from want of punctuality in the periodical publication of the monthly numbers of "The Beauties," he became embarrassed in circumstances, which tended to prey on his spirits, and occasionally paralyze him for many successive years. He had been secretary and librarian to the Russell Institution for twenty-eight years, the committee of which entered the following just and honourable record on their minutes a few days after his decease:—

"*Russell Institution, September* 29, 1854. Resolved,—That this committee having heard with great regret the death of E. W. Brayley, Esq. beg to express their sympathy with the members of his family for the loss which they have sustained, and to record their unanimous testimony to the attention and courtesy which the deceased ever manifested to the members of this institution, for the lengthened period of twenty-eight years, during which he held the important offices of secretary and librarian."

Mr. Brayley was constitutionally of healthy and hardy stamina, and was enabled to bear and surmount great bodily as well as mental exertion. I have known him walk fifty miles a day, for three successive days; and write for the press for fourteen and sixteen continuous hours. At that time he suffered much from a troublesome disorder, and twice was in danger from it. Within six weeks of his death he was assailed by diarrhœa, but neglected to seek medical advice, until illness had prostrated his frame. He then applied to Dr. Joseph Williams, who promptly and skilfully attempted to arrest the malady; but it was too late, for his system was too far subdued to be rallied, and he died a victim to his constitutional enemy—procrastination, on the 23rd of September, 1854, in the eighty-second year of his age. His remains were interred in a cemetery adjoining the north side of the Foundling Hospital. He left a son, one of the librarians of the London Institution, and a daughter. J. Britton.

CEMETERY COMPETITIONS.

Your advertising columns have lately given publicity to the following glaring attempts to excite the *cupidity* of architects:—

1. The Charlton Burial Board offer 20*l.* for drawings and estimates for the erection of the necessary buildings, and for draining and laying out and planting their 5 acres of ground; with the extraordinary addition of 10*l.* for "detailed working drawings and specification."

2. The Doncaster Cemetery Commissioners, after vainly attempting to seduce an architect into designing them cheap chapels, offer 15*l.* for "Designs, ground plans, elevations, and detailed estimates for the laying out 7½ acres, erecting two chapels, with lodge and entrance-gates, the whole to cost 1,600*l.*" Parties competing to have the *benefit* of a trip to Doncaster to inspect plans and levels.

3. The Burial Board of Bury St. Edmund's will give 10*l.* to the fortunate architect who shall furnish them with suitable "Design, plans, and estimates for laying out 10½ acres, and for chapels, lodge, entrance-gates, fences," &c. Permission is in this case *kindly* given to view the spot.

4. The Tiverton Burial Board actually offer the sum of 6*l.* 6s. for the "accepted" plans, specifications, and estimates, for erecting upon their 4½ acres "two chapels, a sexton's lodge, board-room, and entrance-gates:" the competitors to go to Tiverton to see the plan of land.

It appears to me, sir, that these exhibit a somewhat novel phase in the history of competition. Heretofore (although the premiums have in many cases been wretchedly low) the professed object has been to secure the best design; whereas in the above instances it evidently is the main aim of the parties to obtain the cheapest architect and the cheapest architecture. I think you will agree with me in crying shame on those who entertain so ignoble an idea of architecture as to offer such paltry premiums; and with still increased emphasis, shame on all who by competing on such terms not only degrade themselves, but also bring disgrace upon that noble art of which they are the too unworthy professors. Alas! when will architects be wise and united? When will they see that the cure of competition evils rests mainly with themselves? J. N.

THE TOMBS IN WESTMINSTER ABBEY.

Having been much interested in the perusal of the extracts in your last number from the paper of Mr. J. H. Markland, read at the meeting of the Worcestershire Architectural Society, I am induced to notice the evident inaccuracy of the concluding anecdote—namely, that the tomb of Aylmer de Valence in Westminster Abbey was removed from its original position to make room for Wolfe's monument, and placed where it now stands under the direction of the Rev. Dean. Feeling convinced that this could not be the fact, I at once referred to "Dart's Westminster," published, as you are no doubt aware, before Wolfe's monument, or the occasion for it, were in existence. And as well from Dart's description as from his engraved plan of the Abbey, it is clear that Valence's tomb, as well as the adjoining tombs of Edward Earl of Lancaster and Aveline, his countess, remain in the same position in which no doubt they were all three originally erected—namely, on the north side of the High Altar. It is further evident that it was the screen of the chapel of St. John the Evangelist which was removed to make way for Wolfe's monument, the basement of which screen was formed of two ancient monuments, with brasses, and which were then laid level with the pavement of the ambulatory in front of Wolfe's monument, and where, I believe, they still remain.

There was, however, quite sufficient, in connection with Valence's, and the two other tombs above referred to, to have furnished Mr. Markland with an illustration of the reckless ignorance and want of taste at the period to which he alludes, without any such inaccuracy as he has fallen into, inasmuch as on the occasion of the erection of a modern altar-piece in the reign of Queen Anne, these tombs were totally shut out from the choir, and excluded from view, by a substantial wainscotting of carpenter's Gothic. It was then, perhaps, considered quite sufficient that they might be still seen from their sides next the ambulatory; but as regards the beautiful tomb of the Countess Aveline, this remaining privilege was shortly afterwards extinguished, by the erection in front of it of the monument to Lord Ligonier, in the early part of George III.'s reign. The reproach of the shutting out of the three tombs from the choir was redeemed by the removal of the wainscotting on the erection of the new altar-screen soon after the coronation of George IV. but the usurpation of the Ligonier monument has been permitted to continue, and this has been a main inducement for my now addressing you, in the hope that it may attract the attention of the judicious architect who now has the superintendence of the Abbey, and who is likely to have the distinguished honour of restoring the royal tombs. Within the last few years several very judicious improvements have been made in the way of restoration by the removal or rearrangement of monuments; and nothing would be easier than the removal of that of Lord Ligonier for which I would suggest an inoffensive abiding-place by the side of Mrs. Siddons's statue, behind the great monument of Sir Francis Norris. This removal would completely restore *to view* the tomb of the Countess Aveline, though probably in a sadly mutilated condition, as, indeed, is sufficiently indicated from that portion which is restored to view on the choir side; but then I would observe that this tomb, though eminently beautiful, is small, and simple in its details, and that a comparatively small amount would be required for its effectual restoration, for which there are ample existing authorities, without the necessity for the restorer's exercising his own invention, and thus rendering it questionable.

As the countess was not only the wife of a prince of the blood royal, but herself the heiress of an illustrious house, I should submit that a small slice of the Government grant might be legitimately devoted to this object. M. H.

PROVINCIAL NEWS.

Yarmouth.—The new bridge has at length been opened to the public. The following are a few particulars as to dimensions, materials, and cost:—Foundation, 26 feet below low water-mark; 13 feet 7 inches to top of bed-plate; 7 feet 6 inches to top of pedestal; end spans, each 65 feet; centre spans, 50 feet; piers, 16 feet thick at bottom, 12 feet at top; 50 feet in length, to extremity of cut-water; and 36 feet at square. Roadway, 26 feet wide; footpaths, each 4 feet 4 inches; end parapets, corrugated iron covered with African oak planks. Centre—wrought-iron girders, covered with African oak plank; copper lamps on granite pedestals, 10 feet 6 inches, by 5 feet wide; footway—approach radius of 25 feet. The contract price for the work was 24,500*l.*; but in addition to this there have been a great many alterations and deviations from the original plan, and no doubt there will be a large amount to pay for extras; and it is very likely, according to the *Norfolk Chronicle*, that the whole cost of the structure, including the large sums paid for property in the vicinity of the bridge, and other charges, will not fall very far short of 60,000*l.* More than 300 tons of iron have been used in its construction. Messrs. Grissell were the contractors. The engineers were Messrs. Walker, Burgess, and Cooper.

Portsmouth.—The new police station-house at Landport, on the site of the late Tollervy's Pond, has been commenced, and is to be completed by January next. The cost of the building will be 500*l.* and the iron railing 130*l.*: total, 630*l.*

Weston-super-Mare.—It is proposed to erect a new town-hall here, at a cost of 3,000*l.* to be raised in shares. A site has been gratuitously offered by Mr. B. G. Phillips.

Worcester.—At the late county sessions here, a report on Upton-bridge was read, which showed that the amount of contract for iron-work was 3,300*l.*; and extras, 196*l.* 13s. 2d.; for masonry, 4,650*l.*; and extras, 1,256*l.* 10s. (these extras including the cost of the roadway at the north approach, the towing-path, bridge-quay wall, &c.) Labour, stone, tradesmen's bills, &c. brought up the amount to 9,855*l.* 2s. 8d. Mr. Giles's travelling expenses were 100*l.*; but his charge for commission was not yet rendered. Although Mr. Giles had reported that the total amount due on the whole contract to Messrs. Nowell was 5,906*l.* 10s. they had claimed an additional sum of 2,330*l.* During the progress of the works much delay had taken place on the part of Messrs. Butler, who, however, had sustained a great loss by the rise in price of iron.

Exeter.—The new Diocesan Training College, erected in Old Bath-road here, was opened on Wednesday in last week, with great ceremonial. It is an Early English structure.

Lynn Berwyn.—The first stone of a bridge to be erected over the Dee, between Corwen and Llangollen, so as to unite the two counties of Denbigh and Merioneth, was laid on 7th inst. by the Hon. Mrs. Tottenham. Llyn Berwyn-bridge is the name of a deep pool over which the bridge is to be erected. Mr. Edward Lloyd acts gratuitously as inspector of the work. The workmen after the ceremony adjourned to the Sun Inn, Glyndyfrdwy, where they were supplied with *cwrw da*, &c.

Manchester.—The American Amphitheatre, in Fountain-street, which last winter was erected for equestrian performances, is being converted into a Philharmonic Hall. A Mr. Tonks, according to the local *Courier*, has become the lessee of the building, and is entirely remodelling the interior, with the view of affording accommodation for 3,500 persons. An orchestra is being erected for a hundred performers, and arrangements made to render the acoustic qualities of the building as perfect as possible. For the comfort and convenience of the audience, the interior will be divided into dress-circle, stalls, pit, and galleries.

Edinburgh.—The building for the Scottish National Galleries, on the Mound, now in course of construction, is nearly completed, and the Royal Academy will occupy a portion of it in February.

THE BIG SHIP AND A LONDON SQUARE CONTRASTED.

A bare statement of the dimensions of the large ship which Mr. Scott Russell is just now building scarcely conveys a notion to the majority of minds of its vast size, capacity, and cost. An ingenious friend of ours, Mr. Gould, has jotted down some points of comparison between the ship and Tavistock-square, and these serve to make the idea much clearer. He points out that Tavistock-square consists of fifty-six houses, and that there are eighteen houses on one side, of 25 feet frontage, or 450 feet. It would require nine from the other side, or 225 feet, to make the length of the large ship; viz. 27 houses = 675 feet. Then the houses being 42 feet deep, it would require two houses put together to make the section of the ship, which is 83 feet; so that it would actually require all the houses in the square put together in two rows to make a block the size of the big ship, setting aside the angles cut off in coming to the keel.

Again, the inhabitants of the square may be considered eight to a house, or 448 souls; whilst the ship will some day carry four times or five times as many, say 2,240 or possibly 3,000 souls. At any time of winter the fifty-six houses in the square will probably have ten tons of coals each, or 560 tons; whilst the big ship will take nearly twenty times as much, or at least 10,000 tons for its own consumption. To carry the comparison one step farther, the cost of the fifty-six houses to build would be about 112,000*l.*—the furniture, 58,000*l.*; or 170,000*l.* ready to be inhabited. This ship, it is supposed, will cost 450,000*l.* or 500,000*l.* before it is ready for its inmates! Rather striking this.

BURLINGTON HOUSE, PICCADILLY, LONDON.

The doings of official bodies are sometimes very amusing,—very. The public have recently bought Burlington House,—that house concerning which Sir William Chambers has said, "Few in this vast city suspect, I believe, that behind an old brick wall in Piccadilly there is one of the finest pieces of architecture in Europe,"—and thinking that the aforesaid public might like to see what they had bought, we inquired for the means of getting inside the enclosure wall; and ultimately one of our assistants wrote an innocent little note to a gentleman in the Office of Works, to inquire if he might stand inside the gate to make a sketch of the building. Mind, it was simply to stand humbly in the court-yard, not to approach the sanctuary or to deduce from appearances how many years the building is likely to remain unoccupied and profitless; and he expected, as a matter of course, an immediate assent. Behold, however, after the lapse of a certain number of days arrives a mighty missive, endorsed, O. H. M. S. signed by the assistant secretary, and setting forth, in clerkly hand, as follows:—

"4721. 26. 9. 54. Office of Works, &c.
27th September, 1854.

"Sir,—I am directed by the Commissioners of her Majesty's Works, &c. to acknowledge the receipt of your letter, under date the 21st inst. requesting permission to enter the great court at Burlington House for the purpose of making a drawing of the exterior for the editor of the *Builder*; and, in reply, I am to acquaint you that the Board are not, at present, in a position to comply with your request.

"I am, Sir," &c. &c. &c.

We are not going to find fault with her Majesty's Commissioners; and if, when Parliament assembles, Mr. Bell, the architect, or Mr. Peto, or Mr. Alderman Cubitt, or any other of *our* representatives, should move for a return of the correspondence on the subject, and inquire if the Chief Commissioner,—the literary, the enlightened, the liberal Sir William Molesworth (who is opposed to secret diplomacy, likes to let the light in everywhere, and is, really, a man somewhat in advance of the age) was present when this *important* question was discussed and decided, it will be without any special request on our part. But the affair seems to us such a very good joke, that we cannot resist the desire to give our readers the enjoyment of it.

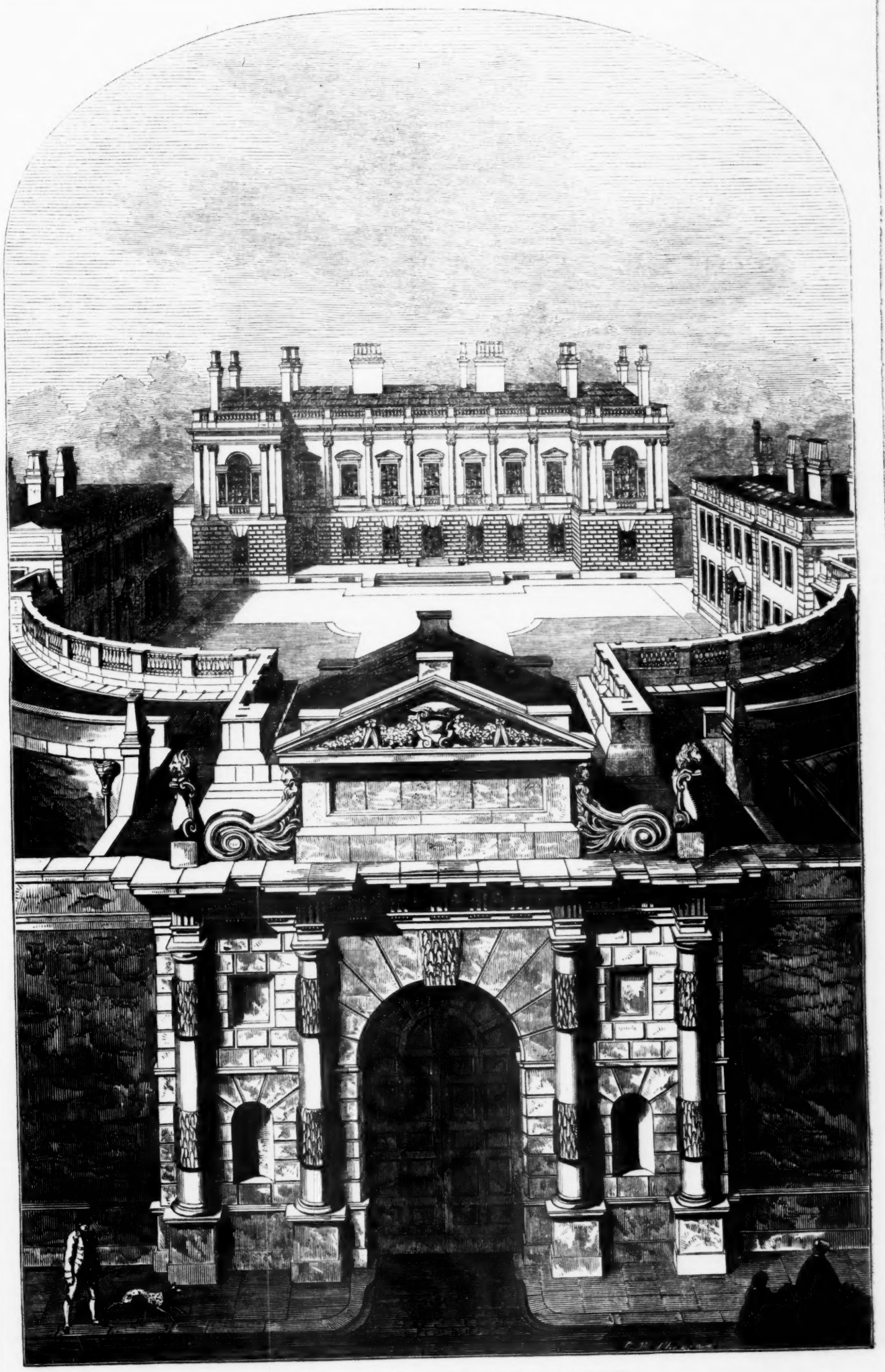
Of course, the sapient refusal did not prevent us from carrying out the intention, though it forced us to look over the wall, and has not allowed us to show fully that part of the design to which those who have praised it must have referred specially, namely, the circular colonnade behind the wall, and in front of the mansion.

Burlington House, as originally built, is ascribed to Denham, the poet architect, who was surveyor-general of the king's works, immediately before Wren. "On the 28th of September, 1668," Pepys writes, "thence to my Lord Burlington's House, the first time I ever was there, it being the house built by Sir John Denham, next to Clarendon House."

Richard Boyle, Earl of Burlington, the protector of Kent the architect, put a new south front to the house, that which we now see, and added the colonnade. The design for the former was made in 1717, and the design for the colonnade in 1718.* Colin Campbell, in the "Vitruvius Britannicus," claims the merit of the design, including the gateway; and though Walpole doubts this, and attributes it to the earl himself, he has but slight grounds for doing so. Walpole describes rapturously the effect the first view of the colonnade had upon him when he saw it after a ball at the house, looking out of the window to see the sun rise. "It seemed, he says, one of those edifices in fairy tales that are raised by genii in a night's time!"

Various alterations in the house were made at a later date, under the direction of Mr. Samuel Ware, and a slip of land on the west side of the edifice was converted into Burlington Arcade, 1819, and now produces more than 8,000*l.* per annum. The mansion is said to occupy about eight acres of ground altogether. The south front of the house, shown in our view, is 130 feet in extent, and the height of it is 48 feet.

* See Britton's "Public Buildings of London," which contains a plan and descriptive particulars of the building.



BURLINGTON HOUSE, PICCADILLY, LONDON.

CHURCH BUILDING NEWS.

Hanham Abbots.—The small church of Hanham Abbots, on the Gloucester side of the Avon, has been repaired and partly rebuilt, and was re-opened on Wednesday in week before last. The church, as restored, consists of a nave, chancel, south aisle, north porch, and western tower. Previous to the restoration, it was in a most dilapidated and insecure state; the walls out of the upright, and the roof falling in. The architects employed were Messrs. Pope, Bindon, and Clark. The nave and chancel are entirely new, and also the whole of the windows. The western tower curiously abuts on the adjoining mansion of Hanham-court, in the open park of which the church stands, and is a specimen of late Gothic, the stages having traceried windows, and terminating with embattled parapet. One ancient bell out of six remains in the tower. The church is entirely reseated with large benches having carved ends, and without doors. The chancel is fitted up with oak stalls, and the pulpit and desk are carved in the same material.

Bishopsteignton.—The parish church of St. John, Bishopsteignton, Devon, was re-opened on 12th instant, after being closed for three months, during which time alterations and improvements have been made from designs by Mr. J. W. Rowell, of Teignmouth. The cumbrous and unsightly north gallery has been removed, the whole church refitted with low seats, in stained deal; and to obtain additional accommodation a new chancel aisle has been built on the north side. The old oak pulpit has been removed to east-end of nave, and a new low screen in oak, with lectern formed in same, and a suitable prayer-desk, have been introduced. The organ, which stood in the western gallery, and obstructed the light of the window, has been removed to the east-end of north aisle, on a platform of sufficient size to accommodate the choir. Messrs. Rowell and Son, of Teignmouth, were the contractors for the works, the whole of which have been carried out at a cost of nearly 700*l.* subscribed chiefly by four or five of the resident gentry of the village, who had just recently expended a large sum in the purchase of land and erection of a new Chapel of Ease at the Hamlet of Luton, about three miles from the parish church.

Teignmouth.—The churchyards of the parishes of East and West Teignmouth have been visited by Mr. P. H. Holland, one of the inspectors appointed by the Home Secretary, and, on account of their overcrowded state, an order has been made for closing them on or before 1st June next. The parishioners, in consequence, held vestry meetings, put themselves under the "Burials (beyond the Metropolis) Act," and elected a Burial Board, who, having appointed their officers, Mr. W. R. Jordan, solicitor, as clerk, and Mr. J. W. Rowell, their architect and surveyor, will now proceed to make the necessary arrangements for forming a cemetery. The site proposed is about one mile distant from the town on the north side, about half-way up the valley towards Haldon, and contains about four acres, which is the quantity ordered by the Home Secretary to be provided.

Llanvihangel, &c.—The churches of Llanvihangel, Tor y Mynydd, and Gwernesney, Monmouthshire, in the diocese of Llandaff, have recently been reopened after complete restoration, with new seating, windows, bell-turret, &c. ——A new bell-turret has been added and other works done to the church of Llaswair Discoed, under the direction of Messrs. Prichard and Seddon, the diocesan architects.

Llanshatyd.—The consecration of the church of Llanshatyd, near Aberystwith, was to take place on Thursday in last week. The plans were furnished by Mr. Penson, architect.

Holyhead.—The new Church of St. Seiriol here was consecrated on Thursday in week before last. It is in the early English Decorated style, and contains a nave, two aisles, chancel, tower, south porch, and vestry. The nave and aisles are 77 feet 6 inches long, and 21 feet wide. The chancel is 26 feet by 19 feet. Near the tower is an octagon font, with emblematical initials carved on each side. The presbytery is ascended by two steps, the sacrarium by three. The priests' door communicates from the chancel into the exterior. The pulpit and reading-desk are of Bath stone. The roof is of open-frame timber-work, stained and varnished in imitation of oak. The floor is laid with black and red tiles; that of the chancel with encaustic tiles in pattern. The tower is surmounted by a spire, ending in a gilded cross, the total height being 132 feet. The exterior is formed of irregular courses of rubble, the stone being of a variegated colour. The window-tracings and the whole of the spire are wrought from Stoureton stone, brought from the neighbourhood of Liverpool. The east window of the chancel is a five-light Decorated window, the head being filled with tracery. The situation of the edifice is lofty. The spire serves as a sea-mark, and the orientation is due east and west. A churchyard encloses the whole. The architect was Mr. Charles Verelst, of Liverpool; the contractor, Mr. Hugh Yates, mason; and the clerk of works, Mr. Edwards, both of same place. The entire cost of the erection is about 4,000*l.* exclusive of site, of which sum there is yet 600*l.* deficient. The Hon. W. O. Stanley gave a donation of 600*l.*; the Rev. C. Williams, rector of the parish, gave 200*l.*; and the remainder consisted of smaller sums. The land was presented through a mutual arrangement between the Marquis of Anglesea and the Hon. W. O. Stanley. After the consecration of the church, the bishop consecrated the new burial-ground, which is set aside for a cemetery. It is situated at a short distance from the town, and is of a suitable elevation. It is 1 acre and 13 perches in extent, and contains a small chapel, the cost of which was defrayed by a church-rate, the Church giving the ground.

Hazlewood.—A monumental arcade of three compartments, in the Gothic style, moulded and carved in Roche Abbey stone, has just been erected in Hazlewood church, according to the *Derbyshire Advertiser*. The inscription is cut on a slab of Aubigny stone, from Normandy. The design was supplied by Mr. H. I. Stevens, architect, and the work has been carried out by Mr. J. B. Robinson, of Belper, sculptor, who has also erected a carved Gothic tomb over the grave in the churchyard.

Rochdale.—The total cost of the restoration of Rochdale Church, we understand, will be about 4,000*l.* The architect engaged in carrying out the restoration is Mr. J. Clarke.

EXAMINING BOARDS.

A TEACHER, who signs himself "A COUNTRY WORKMAN" asks if any steps are likely to be taken by the Institute of Architects or of Civil Engineers as to the Civil Service Bill; and thinks care should be taken that if examinations are provided for, the two Institutes should form the examination boards in their own departments. He complains, too, of the power given to University College. If we mistake not, the subject has been already brought before the Institute of Architects. Is it certain that the profession, as a body, would allow the Institute to exercise so vast a power as the bodies of lawyers, doctors, and apothecaries wield? As to the London University, we believe their powers have not yet been extended to conferring degrees, either in architecture or engineering.

PUBLIC BATHS AND WASHHOUSES.

WE have received from Mr. Woolcott the following account, showing the number of bathers and washers, and the receipts at eleven establishments now open in London in the quarter ended Michaelmas, 1854:—

Name of the Establishment.	Number of Bathers	Number of Washers	Total Receipts.
			£. s. d.
The Model, Whitechapel ...	56,986	9,008	929 14 0
George-street, Euston-square ...	34,738	19,902	808 2 11
St. Martin-in-the-Fields ...	41,430	10,529	759 8 3
St. Marylebone ...	70,998	7,207	961 0 9
Westminster, St. Margaret and St. John ...	43,570	14,552	698 14 9
Greenwich ...	26,336	1,222	365 2 9
Westminster, St. James ...	44,972	9,740	694 11 8
Poplar ...	28,499	1,611	387 6 3
St. Giles and Bloomsbury	72,041	10,349	1,153 5 8
Lambeth ...	70,509	...	1,062 0 6
Bermondsey ...	47,266	1,140	591 0 0
Totals in three months	537,345	85,260*	8,410 7 6

* Or the linen of 341,000 persons.

OUR LONDON BRIDGES AT THE PRESENT TIME.

A REPREHENSIBLE practice has gradually crept on, unchecked by the Thames Navigation Committee, of disfiguring the London bridges, spanning the river Thames by placards, ugly piers, and other like displeasing embellishments.

At London-bridge some enterprising bill-sticker has succeeded in pasting his bills under each arch. On the outside parapet a corporation painter has commenced numbering the arches with a black broad-arrow and the figure 2 with apparently a mop for his pencil and a bucket of tar for his pigment.

At Southwark the same bill-sticker has decorated the arches; and here a most unsightly and disused pier runs from the bridge up the river. The aspect this pier assumes is approaching the architecture of the south side of the Thames, and which nothing but a conflagration could improve. Huge piles on the Surrey side in the river prevent navigation under two or three of the arches of this bridge.

Blackfriars has a monstrous obstruction in the shape of a City pier, obstructing navigation and causing a heavy swell in the centre arches of the bridge, dangerous for small boats to row into its vortex. Three arches are stopped up as dangerous, and numerous piles obstruct navigation.

Waterloo has also become a hoarding for the indefatigable bill-sticker.

Hungerford, with its unsightly pier, is in keeping with its neighbour Westminster-bridge for obstructions. The latter bridge being under the engineers' and architects' dismemberment operations, changes its features almost every day. From the wisps of straw dangling over some of its arches, the engineers indicate the danger of navigation under its arches. Steamboats are cautioned to shut off their steam whilst going under this bridge, lest vibration or swell should bring an arch on deck.

Vauxhall, some months since, had a run-out pier from its centre arch, the toll of which realized 400*l.* per year to the shareholders of this bridge, one of whom having an eye to the architecture of the bridge, discovered a clause in the bridge Act, which enabled him to take legal steps to remove the pier at the expense of his dividend. The man who stuck the bills on the gates of Apsley-house has succeeded here likewise in his vocation.

Chelsea suspension-bridge, which was designed at the outset to be a free bridge, and which would, indeed, have been a boon to the public, particularly at this point of the river, is now, it appears, to levy toll upon equestrians and pedestrians like its right and left hand sisters Vauxhall and Battersea. This bridge will become the approach from the north bank of the Thames to the south, and to the new Battersea-park, and being a tolled bridge, the park will be worse than useless to the inhabitants on its opposite banks. The works of this bridge are going on as rapidly as two boys and a man, who have been at work at it for some months past, can make it. It appears the contractor for the works is at issue with the contractees.

Battersea and Putney bridges would be a disgrace to a Hottentot river; and if "it's talked of" could remove these villanous piles of old wood, we should years ago have ceased to mourn over them. L.

THE ARCHITECTURAL EXHIBITION.

A GOOD EXAMPLE.

MR. WILLIAM HERBERT, of Clapham Common, writes us,—"As you have stated in the *Builder*, that some aid is necessary for the duly carrying out of the architectural exhibition, about to be held in Suffolk-street Gallery, I enclose a cheque for five guineas." We have forwarded it with great pleasure to the honorary secretary, and we hope this liberal and prompt response on the part of Mr. Herbert, will be largely adopted as an example.

THE BUILDERS' BENEVOLENT INSTITUTION.—The annual dinner of this institution was held at the London Tavern, Bishopsgate-street, on Thursday evening last, too late for us to give any particulars in our present number.

SIGHTS AND THE STAGE.

Interested as we are in the progress of scene-painting and stage-decoration, and seeking always to make known the names of the more worthy professors of the art, and to point out their best efforts for commendation, we must not omit to record the effect which has been produced, in this and other respects, at *Sadler's Wells*, in the revival of "Pericles, Prince of Tyre;" although, through the crowd which filled the theatre in every part, we were not placed so as to see it to advantage.

We are not of those who believe that Shakspeare wrote this play, but he doubtless doctored it, and added some scenes. In the original, it is not fit for the table of the family circle, but by judicious omissions, Mr. Phelps has freed it from all objection; and when it is remembered that the action passes through Antioch, the metropolis of Syria; Tyre; Tarsus, of Asia Minor; Mitylene, the capital of an island in the Ægean Sea; and Ephesus, the capital of Ionia, the scope it affords to the scene-painter will be seen at once. Most ably has Mr. F. Fenton availed himself of the opportunity; and he has produced a series of illustrations of Greek and Assyrian-ized architecture, which, though exhibiting here and there a Renaissance tinge, are both instructive and beautiful. The arrangement of the Hall of State, at Pentapolis, where the apartment is formed on the top of the thick wall, and you see over it into the open court below, which the walls enclose, shows a full knowledge of Mr. Fergusson's theory as to the construction of the Assyrian temples. This revival must be considered altogether as a very remarkable production.

The Adelphi.—The first scene for the new drama called "The Summer Storm," which represents meadow land, with a distant view of Hallerton-place, is a very complete one: the stage is covered with grass, and Mr. Keeley, as a bird-catcher, with his nets spread, completes the illusion. There is also a very good scene in the third act, the chalk-pits, with their thin layer of mould on the upper surface, very creditably painted by Messrs. Pitt and Turner. The piece itself is weak in construction; but it is very well acted, and by dint of strong "Adelphi effects," will doubtless draw for some time to come. Of the latter, the climax is that wherein the floor of one of the apartments recedes bodily from beneath the feet of its occupant, and precipitates him into the yawning chasm. All hold their breath.

St. James's Theatre.—At this theatre, recently opened under new management, considerable pains appear to be taken to give completeness to the pieces produced. "The King's Rival," although not quite so successful, in the first instance, as some previous plays by the same authors, Messrs. Tom Taylor and Charles Reade, has been made, by a few omissions, and by wedging up, a very effective piece. It purports to be a picture of the times, those of King Charles II. such as they were, and we have a scene of Spring-garden. The old Spring-garden, between Charing-cross and St. James's-park, which had its name from a jet of water that was made to wet those who were near it, by the pressure of the foot, was a place of great resort in the reign of Charles I. After the Restoration, the ground was built on (the spot still retains the name), and a new Spring-garden was formed, which we now know as Vauxhall. Nell Gwynne, who figures prominently in the piece, is charmingly played by the manageress, Mrs. Seymour, and the whole is very satisfactory.

The Royal Panopticon. — The Illuminated Fountain now being exhibited here is one of the most beautiful sights in London. It appears to be an adaptation of Duboscq's apparatus to the great fountain of the Institution, colours being imparted from the top of the dome, as well as at the spring of the water. Mr. Malcolm's lecture on Natural Magic is very amusing, though it appears a pity to destroy some of the clever tricks which used to puzzle all beholders. Some very good dissolving views of Verona and its buildings have taken the place of the sad daubs which *illustrated* "Acis and Galatea," and in other respects a considerable change for the better is apparent. A very pleasant evening may be spent here.

A new Theatre at Boston, United States, has been built. The stage is 67 feet deep from the curtain, and, calculated from the extreme front or foot-lights, measures 85 feet. The curtain opening is about 48 feet in width by 41 feet in height. There is a depth of some 30 feet below the stage, and the height from the stage to the fly-floor is 66 feet. These distances allow the raising and lowering of scenes without hinges or joints, the use of which soon injures their appearance. There are seven rows of side scenes or wings, with considerable space beyond the most remote, for perspective. The stage is provided with traps, bridges, and all contrivances for effect. The green-room is 34 feet by 18 feet. The walls separating the stage from the auditorium are of brick, and considered fire-proof, while the curtain opening is provided with a safety-screen of iron net-work, balanced by weights, and managed with machinery so arranged as to be operated from either side of the curtain wall. The auditorium is about 90 feet in diameter, and circular in form, except that it slightly flattens in the direction of the stage; the depth from the curtain to the back of the parquette being 84 feet. The front of the stage projects into the auditorium 18 feet, and the height of the auditorium is about 54 feet. There are proscenium boxes on either side of the stage, handsomely draped. A space of 10 or 12 feet from the parquette wall, and nearly parallel with the front of the first tier, is separated and somewhat raised from the middle portion of the house, the whole parquette floor, however, being constructed in a dishing form, and varying several feet. The grand staircase is built of solid oak, with a heavy rail on either side resting on open panel work: it commences between scagliola columns some 16 feet apart, and rising a few steps separates on a board landing into two branches 9 feet in width, which, flanked with arcades, wind gently upward and terminate in the dress circle lobby above. The auditorium is lighted from wall brackets, and by a circular *sun-burner* located in the dome of the ceiling.

"THE DICTIONARY OF ARCHITECTURE."

At a meeting of the committee of the Architectural Publication Society, held on the evening of Wednesday, the 25th of October, Mr. Tite in the chair, it was resolved to submit the whole question of the future plan and scope of the Dictionary to a general meeting of the subscribers, which will be summoned for Tuesday, the 14th of November, at the rooms of the Institute of British Architects. The object of all, of course, must be, not to throw any obstacles in the way of its completion, but to carry it out in the best possible manner.

DOINGS ABROAD.

A correspondent, writing to us from Baden, says,—There is very little new between Paris and this place.

In the principal street at *Amiens* several new houses are being built, of a most substantial character (stone). They are intended for shops.

At *Rheims*, the restoration of the north-west tower of the cathedral is progressing, that of the south-west being completed so far as the spire, a few feet only (five or six) of which are executed. The scaffolding, however, is removed. The railway station is very inconvenient at this place: all take their tickets at the same office.

At *Nancy*, a new railway station is in course of erection, now up to the first floor: it extends on each side of the line *about* 150 feet; material, stone; floors, fire-proof (of course): the ground floor is a plain arcade.

At *Strasbourg*, the new railway station is nearly completed, little more than fittings being required. It has a façade of 150 to 200 feet on the river-side; an arcade, with moulding on angles of piers, continued round the arch; nothing above the arcade in centre of river front; but an upper floor is carried up at the angles, and continued along the two lateral elevations: the upper floor has windows, with an ordinary architrave, not of very good proportion: the ground floor as in front; material, stone; the design rather indifferent. In the cathedral, workmen are still employed on the screen (?) enclosing the area on the south side of the building: eleven traceried heads are supplied to the doors and windows in the screen: there are nine to be done to complete the work, as on the north side, which has been some time finished.

THE OXFORD MUSEUM COMPETITION.

We understand that thirty-three architects have submitted designs for the proposed museums in reply to the advertisement. We also learn that in order to give all members of convocation an opportunity of forming a judgment upon their merits, it is proposed to arrange them alphabetically, according to the mottoes sent with them, in the Radcliffe Library, and open them to public inspection.

PRESERVATION OF OAK DOORS.

I put up, about the date 1845, in three or four different places and situations, oak doors and churchyard gates exposed to west and southern aspects, and found after using either boiled oil or varnish the same rusty or dirty mouse-like colour as named by "O. W. W. F." It is the varnishes that cause the bad colour. If either have been used, let it be thoroughly cleaned off and a plentiful supply of raw linseed oil be used at once, and a soaking occasionally and rubbing it in with a cloth will remove the dirt and dust that may collect, and the wood will soon get a fine dark colour, showing all the grain of the wood throughout. The raw oil will not form a body for the air to act on as on the varnish, but will only darken the oak. W. H. F.

I use the oil hot—warm at least,—but copal varnish is objectionable: when exposed to the elements it cracks, chips, and turns to a lightness. What I suggest for an external varnish is far superior, namely, dissolved or liquified caoutchouc,—the common India-rubber, dissolved in a menstruum of alcohol or rectified spirits of wine: *probatum est.*

Thomas Goodliffe.

And "A Lady" writes,—

"I have a great fancy that oil plentifully used after the scraping process would restore and preserve the oak door. Dining-tables polished with oil, only well rubbed in and off, have a much brighter face than French polish gives, and do not mark with the hot dishes. Of course it darkens the wood, but that in this case could be no detriment."

AMERICAN BUILDING PATENTS.

We condense the following from the more recent lists of patents published in the *Journal of the Franklin Institute of Pennsylvania*:—

"For an Improvement in Travelling Bridges; Frederick Field, Adrian, Michigan. Claim: 'My bridge acts as a carriage as well as a bridge, receiving its load upon it while resting on the abutments, or one side of the span or spans to be crossed, carries the load over, and rests upon the other side to receive its return load, and so back and forth, leaving the spaces between the piers open for vessels, &c.'——For an Improvement in Iron Buildings; Stephen Colwell, Philadelphia, Penna. Claim: 'The mode of constructing the skeleton walls of buildings of any desired thickness, by placing vertically upon each other, rectangular frames, or hollow squares of cast-iron, and sections of same, like bricks or blocks of stone, but not breaking joints, as in laying brick or stone, the said frames being connected together and levelled, substantially as described, the skeleton wall being separate from the covering of the building, but adapted for receiving on its exterior or interior surface a covering of plates of iron, or other suitable material, removable at will.'——For an Improved Mode of Securing Stones in Foundations; J. P. Avery, Stonington, Connecticut. Claim: 'The combination and arrangement specified, of the dovetails and tightening key, or its equivalent, when the said dovetails are constructed of taper flanch form, fitting within or under projecting lips to the dovetail recesses in the stones, to draw and clamp the two courses together, the said dovetails fitting within the one stone of the one course, and the two stones of another course, and being driven home by the intervening key, to make tight the vertical and horizontal joints in the two courses, and to clamp the two courses together firmly and permanently.'——For an Improvement in Brick Pottery Kilns; Joseph Baron de Palm, now residing in the City of New York; patented in England, July 13, 1852; in

France, August 13, 1852; and in Holland and Belgium, September 15, 1852. Claim: 'A series of upper and lower chambers in kilns for baking or burning bricks and pottery, communicating with each other by apertures in the partition walls and floors, in combination with adjustable dampers or registers in the apertures in the floors between the upper and lower chambers, as described, for the purpose of regulating and controlling the heat in its ascent, and directing it to those parts of the upper chambers where it may be most required.'——For an Improvement in Brick Machines; Stephen Ustick, Philadelphia, Pennsylvania; ante-dated November 15, 1853. Claim: '1st. The arrangement, substantially as described, of the mould box, with the fixed and movable pistons, whereby, by its motion in the line of motion of the piston, it is made to perform the function of feeding the clay between the pistons, shutting it off from communication with the hopper, and discharging the brick. 2nd. The apparatus for receiving and delivering the brick, consisting of the hand, table, and finger, arranged and operating substantially as described. 3rd. The arranging on the cam wheel the oil boxes for lubricating and cleaning the faces of the pistons. 4th. The withdrawing the condensed air from the mould while the pressure is produced by the groove and scraper, or other equivalent devices, substantially as set forth.'——For an Improvement in Brick Machines; Thomas E. Seay, Columbia, Virginia. Claim: 'The vertically-moving knives, arranged as described, in combination with the levers and slides, whereby the moulded bricks are separated from the mass of clay at the same time that the moulds are raised from their recess, for carrying away and discharging the bricks. Also, the employment of the gratings, as described, between the mill and moulds, for screening the clay from stones and other hard substances, when this is combined with the exterior chamber, into which the stones and other substances are forced by the action of the clay.'

SEWAGE AND WATER.

YOU express an opinion that the Commissioners of Sewers should also be Commissioners of Drainage,—ought they not to be Commissioners of Water Supply also? I think they ought to be: then if every street and lane has a sewer, and every house therein has a drain well constructed, and if every drain has a water supply at its farthest extremity, which water supply should be *constant*,—say from a half-inch pipe,—then I think we should be in a fair way of having a wholesome sewerage; for until the artery (or clean water pipe) supplies the pure fluid the circulation through the vein (or soil-drain) must be defective. I think if we take the system of the circulation of the blood in the human body as the basis of operations in our sewage works we shall not be far from attaining perfect results. The matter appears to be of so much importance that it should be undertaken by somebody who would adopt it in all places where drainage is used, but more especially in the metropolis, where such vast sums are paid for water, without having what is actually required. I know of one district, supplied by the Lambeth Company, where they have charged 50*s.* per annum upon houses rated to the poor at 20*l.* per annum, which houses contain but seven rooms, including scullery and attic. G. P.

THE DRAINAGE OF BANGOR.

IN the various attempts, successful and unsuccessful, to improve the drainage and promote the healthfulness of towns, the local boards of health and other authorities on whom rest the responsibility and weight of such attempts have met with much obloquy and stubborn resistance from the ignorant and the greedy portion of various communities, and even sometimes from those who ought to have known better. One class of professional men, however, whose interests are materially at stake in every attempt to promote the healthfulness of towns, has everywhere formed a noble exception to this obstructive policy: we allude to the medical faculty, of whose disinterested and strenuous endeavours to aid local boards of health in their onerous, and, in many cases, by no means popular exertions, we have noted many instances. A medical man, therefore, who has obstinately and systematically acted on the contrary line of tactics, even under the false pretence of disinterested concern for the public health and welfare, stands out in glaring contrast to the general body of his professional brethren. Almost the only one of the kind we recollect of, has, it appears, been perseveringly at work of late in Bangor, instigating the poorer and more ignorant classes against the new system of drainage which is being carried out there, and that with so much temporary success, that the Central Board had lately to put the inhabitants to the additional expense of sending their inspecting engineer, Mr. H. Austin, down to make a thorough investigation into the alleged causes of complaint, and of the report of that gentleman, after inspecting the district, and conferring with the local surveyor (Mr. E. Johnson), we have just had a copy forwarded to us by a Bangor correspondent. From this report it appears that there is not the slightest foundation in fact for the complaints urged, and which, in all probability, would have been urged, under other forms and pretences, whatever system of drainage had been adopted, or whoever had attempted to carry it out and so to deprive this worthy of a portion of his professional fees. We cannot (and indeed need not) enter into any detail of so baseless a system of obstruction to useful measures, and will only add that it is gratifying to know that the inhabitants (in the words of Mr. Austin's report to Sir Benjamin Hall) may now "congratulate themselves that the local board, in the midst of great and undeserved obloquy, have proceeded steadily in discharge of the duties thrown upon them by the Act, and have carried out a system of works which is a credit to the town." The result, therefore, is, that instead of a stop being put to further progress of the works, as was prayed at the instigation of the person alluded to, and doubtless sincerely and anxiously desired by him at least, the Local Board have received the sanction of the General Board to borrow more money, in order to enable them to carry out these works. The new water-works, we are also glad to hear, are making a satisfactory progress, and in a few weeks the new supply will be available, and the house drainage may then be fully carried out, the surface drainage completed, and all nuisances removed.

Notices of Books.

Proceedings of the Architectural Institute of Scotland. Session 1853-54. Edinburgh.

THE last part of the third volume of "Proceedings of the Architectural Institute of Scotland," recently published, contains four meritorious papers, viz.: "On the Adaptation of previous Styles of Architecture," by Mr. Alexander Christie; "On the Hills and Valleys, and the Walls and Gates of Rome," by Mr. Alexander Thomson; "On the Tombs of Rome," by the same author; and "Remarks on Colour, as applied to Architecture," by Mr. C. H. Wilson, of the Government School of Art. While advocating the use of brighter colours inside than have been used, Mr. Wilson deprecates an imitation of the Greeks in the practice of painting the *exterior* of our public edifices, and in colouring statuary.

How long is London to be Victimized by its Sewage? London: Effingham Wilson. 1854.

THE real motive of this pamphlet appears to be to set forth the merits of Mr. Morewood's scheme of tunnel-sewers, and to denounce the intention of the Commissioners of Sewers to "suffer the metropolis, under the 60 feet level, where the malaria is registered by 7,000 deaths [during recent outbreak of cholera], to remain without any outfall drain on the north side of the river, until they shall have furnished two outfalls to the higher districts, where the same barometer gives us only 575 deaths." The necessity for a low-lying outfall drain is certainly most imminent. We agree with the writer, that it is no slight reflection on this country, whilst possessing the most abundant capital and the greatest engineering skill of the age, that her legislators should breathe the exhalations of the sewers, her noble metropolitan river be converted into a cesspool, and 600,000 of her inhabitants, close upon the seat of Government, be living with sewage water in their cellars.

Mathematical Tables. By J. L. ALEXANDER, Engineering Surveyor. Penny, Lincoln's-Inn Fields. 1854.

THESE tables are intended to facilitate the setting out of curves of railways, roads, canals, centres for arching, &c. They appear to have been prepared with great care, and are well printed on good stout paper, forming a handsome little volume.

The Statist. No. I. Vol. I. Edited by R. T. JOPLING, F.S.S. Mitchell, Red Lion-court, Fleet-street.

THIS new candidate for public patronage begins with several well-timed articles on life and health, such as statistics of Accidents in London, Cholera and Hospital Statistics, Health and Longevity, &c. besides others on Games of Chance, Reviews, &c. There is a decided want of such publications among the more limited scientific classes; but important as the general subject of statistics is, we fear there may be scarcely buyers enough to enable the publisher to continue such a work. In the present instance, however, a bi-monthly issue only, and a very moderate price (1*s.* 6*d.*) may, with able editing, overcome the difficulty, and we hope it will.

A Manual for Practical Surveyors. By E. W. BEANS. Trubner and Co. Paternoster-row. 1854.

The Practical Surveyor's Guide. By A. DUNCAN. Sampson Low, Son, and Co. Ludgate-hill.

THESE are both American publications, and are very fair compilations; but they are scarcely so much needed in this country as in America.

Miscellanea.

SEPULCHRAL MEMORIALS.—Your correspondent's idea is carried out, and has been in use in the London cemeteries at Highgate, and Nunhead, near Peckham, in Camberwell parish, for several years. The names, &c. of those buried as common interments for 30*s.* including chapel service, may be placed on pillars for a trifling fee. I have frequently heard very gratifying remarks from humble persons on reading the inscription to their friends. I think the pillars cost erecting about 100*l.* and are now more than paid for. This fact is an encouragement to the excellent suggestion of your correspondent in last week's *Builder*.—H.

MANCHESTER AND SALFORD SANITARY ASSOCIATION.—The annual meeting of this association was held on Thursday before last, in the Town-hall, Manchester. The meeting was numerously attended; the Bishop of Manchester presiding. On the platform were the mayor, and Sir James Bardsley, M.D., Mr. James Kershaw, M.P. and many other gentlemen. The Right Rev. Chairman, in opening the proceedings, said he believed that the greatest possible good had both morally and physically resulted from the working of this association,—that its enlightened and benevolent objects had been attended with the happiest results—results almost exceeding those contemplated by the proposers themselves. There were various speakers, and several resolutions were passed, one of which was to the effect, that inasmuch as preventible diseases are now known to constitute a very extensive class, and the loss of human life and increase of suffering caused by such diseases are every year exceedingly great, the meeting was of opinion that the efforts of the medical profession of the district to explain the causes of such diseases, and the valuable assistance they had rendered to the association, deserved the most public acknowledgment. In the evening a public meeting of the friends and supporters of the association was held in the Town-hall, Salford. The mayor of Salford presided. A resolution was here passed, to the effect that the efforts made by this association to improve the personal and home habits of the people, by means of lectures and tracts, deserved the special encouragement and co-operation of the friends of sanitary improvement; particularly as such efforts, in whatever degree successful, tended to remove very serious impediments to the influence of religion and education.

IMPROVEMENTS IN BORING ROCK.—Mr. Nasmyth proposes to overcome the *vis inertiæ*, by converting the iron bar, or jumper, into a piston-rod, working in an air-tight cylinder, through a stuffing-box. By this plan, it is conceived that increased force will be acquired; for when the piston is drawn out to the end of the cylinder, the pressure of the atmosphere will force it back again with increased effect. It was suggested at the meeting of the British Association, where Mr. Nasmyth read a paper on the subject, that a similar result might be produced, even more readily, by the employment of vulcanised india-rubber springs. Mr. Nasmyth observed, that any very elastic medium might be made to answer the purpose, but air suggested itself, as affording greater extent of spring.

ST. PAUL'S, DEPTFORD.—The death of Mr. R. I. Martyr, alluded to in the *Builder* of last week as rendering the district surveyorship of Deptford vacant, also makes a vacancy in the office of surveyor to the same parish. Already there are two candidates in the field; first, Mr. Maltby, who contested for this appointment at the time of Mr. Martyr's election, and has ever since been a resident at Deptford: his opponent is Mr. Lideart, late clerk to Mr. Martyr. Mr. Maltby had served the parish for six years previous to the appointment of a permanent surveyor with a salary, which gives him a claim.

The French Crystal Palace.—The glaziers employed at the Exhibition Palace on Saturday morning before last, displayed a flag from the top of the grand aisle of the building, to indicate the complete termination of the operation of covering in with glass the gigantic edifice.

Curiosities of London. — Mr. John Timbs's long-announced volume of "Curiosities of London," is just ready for publication by subscription. The work will exceed 750 closely-printed pages: the author's materials have been five-and-twenty years in collection. The "Curiosities" will include the topography of the town in its more celebrated localities and associations, manners and characteristics; its existing antiquities, and collections of rare art and *virtu*, libraries and museums, public buildings, and royal and noble residences; its great institutions, its public amusements and exhibitions, manufacturing and commercial establishments; so as to chronicle the renown of modern as well as ancient London. Mr. Timbs has been long a worker in the field of London antiquities, and will doubtless produce an interesting and valuable volume.

American Monuments. — The monument to Henry Clay, in the Lexington Cemetery, Kentucky, is to cost from 50,000 to 100,000 dollars. The committee offer a premium of 500 dollars for the best plan and specification. —— A great monument is about to be erected in honour of the landing of the Pilgrim Fathers. Land has been obtained for a site, and 20,000 dollars have been subscribed.

Austin's Hexagonal Separating Drain-pipes. —The object of this invention is to afford ready access for clearance from any obstructions, and to prevent the present waste by breakage consequent upon the clearing of socketed pipes. They are also available for casing over telegraphic wires, for service-pipes for gas, water, &c. The tubes are circular inside, hexagonal outside, and the upper part lifts off. On this form of construction (honeycomb) Mr. Austin has also patented casks or barrels for dry and wet goods, for compact stowing.

Appointment of County Surveyor at Worcester. — The votes taken at the late quarterly sessions on the list of three names already referred to, were as follows:—Mr. Rowe, twenty-five votes; Mr. Day, twenty-two; and Mr. Milne, eight. The chairman adverted to the fact that the candidate highest on the list had not a majority of votes, if the whole bench were included; and the question was, whether there ought to be a second taking of votes between Mr. Rowe and Mr. Day alone. Was it a valid election as it stood? They had the precedent of Parliamentary elections in its favour. It was finally agreed not to disturb the voting, and Mr. Rowe was therefore elected.

Bell-ringing a nice Recreation for stout Gentlemen.—A correspondent, Mr. Haydon Wilson, who speaks of bell-ringing as an amusement requiring as much attention as cards, draughts, or billiards, suggests the formation of ringing-clubs of gentlemen, who might develop the science, and bring it to high perfection, not only to their own amusement and recreation, but also for the public enjoyment.

City of London Cemetery.—A committee have reported to the Commissioners of Sewers "that the land for the City of London Cemetery having been enclosed under the contract already entered into with Messrs. Crook, and the time having arrived for the execution of the necessary buildings thereupon, we have had laid before us, agreeably to our directions, by the surveyor, the plans for the erection of such buildings, consisting of an Episcopal chapel, a Dissenters' chapel, a superintendent's house, a porter's lodge, and the gateway forming the principal entrance. That, having examined the same, we have approved of them, subject to certain alterations which we have suggested, and recommended them to your hon. Court for adoption. We also recommend that you receive tenders for the execution of these works in one contract, together with certain works of extra drainage which are found necessary, immediately. These several works are estimated by the surveyor to cost about 16,000*l*. We have also approved of a plan for the construction of catacombs, to receive about 800 bodies, but at the present time to be completed for the reception of only 200." About 70,000*l*. is spoken of as the probable total cost.

Model Cottages.—Some model cottages are to be erected at Sutton, Surrey, for the City of London and Counties Land Society; Mr. Knightley, architect. The following tenders have been received. The first is probably the result of some misunderstanding or accidental error:—

Hyatt	£940	0	0
Stevens	584	0	0
Freeman	564	0	0
Clowser and Potter	490	0	0
Stone and Bushby	490	0	0
Pready	486	0	0
Page	471	0	0

London City Sewers.—The Commissioners have referred the question of properly ventilating the sewers to their surveyor and medical officer. In the course of the discussion Mr. Hopgood said that four or five years ago, when this subject was discussed in that Court, a gentleman in the City very kindly consented to allow a ventilating shaft to be placed near his house. On his return to town, after a short absence, his wife and four or five children, as well as himself, were taken ill in the middle of the night, the gas thrown off having entered the apartments of the house and caused sickness of a very alarming nature. In that instance, therefore, the experiment was tried and did not succeed.

Evening Classes for Young Men in London.—The sixth year's report and prospectus of the metropolitan committee for establishing evening classes for young men in London and the suburbs, have just been issued. The report gives the satisfactory intelligence that this useful and commendable association has become, by another year's efforts, more widely established and more firmly rooted than before. The reading-room and library at Crosby-hall have been improved, and the lectures have been better appreciated than they have ever been. Most of the classes have comprised no less than 1,529 students, or about 500 per term. The institution is being extended, and ought to be encouraged and supported, as it is doing much good.

Mold.—The magistrates, at the last quarter sessions for the county of Flint, appointed Mr. T. M. Penson, of Chester, surveyor of public works, upon the resignation of their late surveyor.

New Church and Parsonage, Tulse-hill.—The designs of Mr. T. D. Barry have been selected. There were seventeen competitors. Messrs. Rowland and Evans have contracted for the whole work, at the sum of 7,500*l*.

Hydraulic Power in Grimsby Tower.—Nearly all the works of the Grimsby Docks are carried on by means of hydraulic power, supplied from a tower, which rises from the centre pier to the height of 300 feet, and can be seen sixty miles out at sea. A steam-engine of 20-horse power, placed at a distance of three-quarters of a mile, pumps into a tank erected in this tower, at a height of 220 feet, a never-failing supply of water. In this way, by mechanism familiar to engineers, a degree of hydraulic power is obtained which at Grimsby serves to open and shut the immense lock-gates, to regulate the sluice-gates, to work the cranes for discharging and for loading ships, and to hoist goods into and out of the lofty warehouses. All this work is accomplished with an ease which appears marvellous, when contrasted with old modes of performing the same operations. For example, at the Liverpool Docks, some sixteen men take half an hour to move a pair of 70-feet gates. At Grimsby, gates equally ponderous can be moved by two men in a couple of minutes. The Grimsby Dock is the only one in the kingdom at which hydraulic force has yet been brought so completely under control for performing the varied handiwork required upon the quay side, but the principle is now being extensively applied, as we long since anticipated it would. The Prince Consort, when lately at Grimsby, complimented Mr. Rendel upon the successful issue of the great works there, which, carried out under extraordinary difficulties, have led to the reclamation of 130 acres of land from the sea, and to the construction of a dock 20 acres in extent, and a tidal basin with an area of 13 acres, affording most complete facilities for the landing and shipment of merchandise.

New Metals for Machinery.—Mr. J. P. Kingston, of Lewisham-road, Kent, has patented the combination of tin, copper, and mercury, and use of the same as bearings, or linings of bearings, and for packings for machinery. The patentee melts (say) about nine pounds of copper, and adds thereto twenty-four pounds of tin. This combination he allows to cool, and again melts it, and then adds 108 pounds of tin; and when the tin is melted, he adds nine pounds of mercury, and then allows the whole to cool. The patentee does not confine himself to the precise quantities of the metals above given. He claims the combining mercury with tin and copper in the manufacture of bearings and packings for machinery.

The Nottingham Warehouse.—By accident, the references to the plan of residence attached to Messrs. Adams and Page's warehouse, given in our last number (page 546) were omitted. We now supply the deficiency:—

A. Entrance-hall.
B. Dining-room.
C. Parlour.
D. Kitchen.
E. Scullery.
H. Hoist.
I. Private staircase.
J. Men's staircase.
K. Women's staircase.

New Inodorous and Smokeless Stove.—The Polish general, Dembinski, has invented a cylinder, of zinc, copper, sheet-iron, or any other metal, with an inner and removable heating cylinder, containing sand or small stones, and connected by means of two tubes with a very small vessel, placed on a fire or over a gas light or lamp. The space between the two cylinders, which is small, is filled with cold water. The vessel on the fire is made of very thin metal, and is filled with water which boils almost immediately. As the water boils it rushes by one of the pipes to the cylinder, and by the other returns to the vessel over the fire, and this process goes on till the whole of the water boils, which is in one-fourth of the time required in the usual way. The process is continued till the sand or stones in the inner cylinder have become perfectly heated. Two stop cocks close to the cylinder are then turned, and the pipes being unscrewed, the cylinder is carried by means of handles to any room which it is intended to warm. The temperature of the room is said to be increased several degrees by the use of this cylinder, which of course gives out neither smoke nor carbonic acid, and at the end of five hours the heat in the cylinder is still, it is alleged, so great, that the temperature of the room is very nearly what it was when the cylinder was first introduced. If more than one cylinder be wanted, the generator remains over the fire, and other cylinders can be attached.

For Laying Pipes in the Earth, and the Junction of such Pipes.—The Earl of Dundonald has patented a carriage having a cutter for vertically parting the earth, with a horizontal tool attached like that of a drain-plough. From the upper part of the carriage a duct descends obliquely to the tool, through which duct, drain-pipes or other pipes, connected by an elastic or other rope, may be continuously deposited in the channel formed by the progressive motion of the apparatus. The junctions may be lubricated by the machinery with clay.

Prevention of Drafts through Doors or Windows.—Mr. J. Greenwood, of Arthur-street West, London-bridge, has patented certain modes of applying india-rubber for these purposes. In the case of the hanging stile of a door, easement, &c. he proposes two modes of using the india-rubber. 1st. A groove is ploughed in that part of the rebate of the door jamb or frame against which the edge of the door will press, when closed, and a corresponding groove in the edge of the hanging stile of the door, so that the two grooves form one chamber when the door is shut. A piece of india-rubber is then cut slightly broader than the depth of this chamber, and glued into either of the grooves, and the projecting part of this strip, passing into the other groove when the door is closed, becomes compressed, and excludes the draft. 2nd. On the stop of the jamb an additional stop, moulded or otherwise, is fixed, containing a groove ploughed along the edge which faces the door at about an angle of 45 degrees with such edge. In this groove a strip of india-rubber is then glued, and becoming bent by the closing of the door, shuts out the draft. This strip appears on the face of the door when it is closed. A similar mode to that last described is employed for the sills and meeting-rails of sashes, and the stiles of folding-doors

TENDERS

For nineteen houses to be built for the Ironmongers Company, in St. Luke's parish:—

Wilson	£6,690	0	0
Brown	5,610	0	0
B. and C. Hayn	5,555	0	0
Thomas	5,000	0	0
Horker	4,600	0	0
Page	4,540	0	0
Hill	4,316	0	0

For two dwelling-houses, at Deptford, for Messrs. Woodbridge and Smith. Mr. G. Legg, architect:—

Coleman	£2,930	0	0
Tarrant	2,748	0	0
Paul	2,694	0	0
Penny and Wynn	2,623	0	0
Wells	2,620	0	0
Newbury	2,440	0	0

TO CORRESPONDENTS.

"J. S." "Syntax." "J. F." "B. H." "J. T." "An Architect," "F. M. S." "G. P." "Bartholomew the Great." "F. S." "W. S." "J. A." "G. L." "E. C." "J. E." "G. W." "F. C." "*Spes*," "Parallel." "W. G. D." "E. T. B." (shall appear). "G. F." "G. M." "Inquirer" (not safe in all cases. Chloride of lime much better), "W. A. A."

Galvanized Iron-piping. — Professional readers are asked for "information respecting galvanized iron-piping, whether it has stood undecayed in streets repaired by the refuse of iron foundries, glass and chemical works."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

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